DENON

Hi-Fi Componei

SERVICE MANUAL

STEREO CD PLAYER

MODEL DCD-1500II

NIPPON COLUMBIA CO., LTD.

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FEATURES

The DCD-1500II compact laser disc player utilizes a unique DENON Super Linear Converter which prevents deterioration of sound quality in the PCM playback system, assuring accurate reproduction of sound record on compact laser discs, in the studio or in live sound production areas. The parts for this high performance disc player have been selected with careful discrimination, to produce high quality, realistic playback of the full musical production.

SPECIFICATIONS

AUDIO

No. of channels:	2 channels
Frequency response:	2 ~ 20,000 Hz
Dynamic range:	96 dB
Signal-to-noise ratio:	103 dB
Harmonic distortion:	0.003% (1 kHz)
Separation:	100 dB (1 kHz)
Wow and flutter:	Less than the measuring limit (±0.001% W. peak)
Output voltage:	Fixed: 2.0V Variable: Max. 2.0V
DISCS	Audio compact discs are used.

GENERAL CHARACTERISTICS

Power supply:	50/60 Hz, Voltage is shown on rating label
Power consumption:	17W
Dimensions:	434 (17.1 in) X x 107 (4.2 in) H x 324 (12.8 in) D mm
Weight:	9.3 kg

FUNCTIONS AND DISPLAY

Functions:	Direct selection, automatic search, programmed selection, repeat playback, manual search, auto space, time mode, call, auto edit.
Display:	Track number, index number, time, program, and direct, etc.
Other functions:	Headphone Jack (Variable level) Digital out ON/OFF Switch.

REMOTE CONTROL UNIT	RC-202
Remote control system:	Infrared pulse system
Power supply:	3V DC Two SUM-3 (standard size AA) dry cell batteries
External dimensions:	62 (2.4 in) W x 162 (6.4 in) H x 18 (0.7 in) D mm
Weight:	120 g (Includes batteries)
ACCESSOIRES	Connecting pin cord, Mini screwdriver

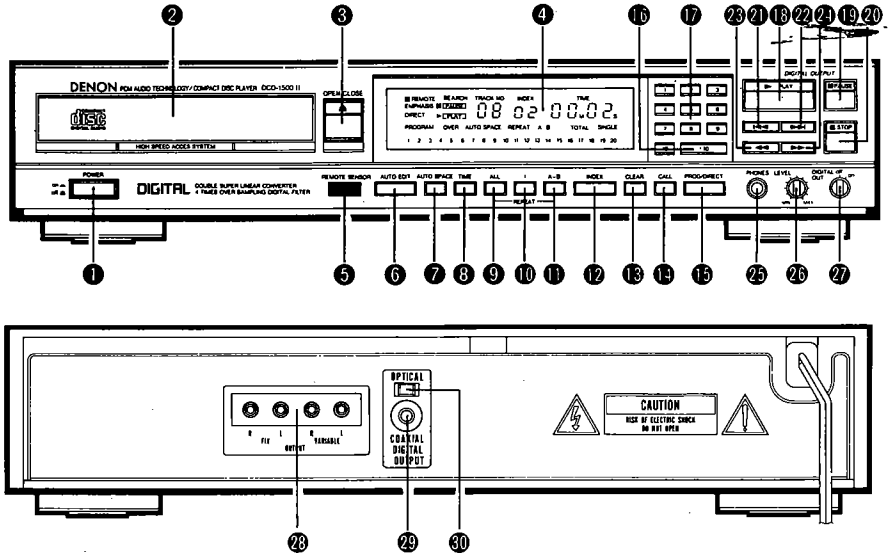
* Design and specifications are subject to change without notice in the course of product improvement.

VAROITUS: SUOJAKOTELOA EI SAA AVATA. LAITE SISÄLTÄÄ LASER-DIODIN, JOKA LÄHETTÄÄ NÄKYMÄTÖNTÄ SILMÄLLE VAARALLISTA LASER-SÄTEILYÄ.

ADVARSEL: USYNLIG LASERSTRALING VED ABNING NAR SIKKERHEDSAFBRYDERE EU UDE AF FUNKTION. UNDGA UDSAETTELSE FOR STRALING. "CLASS I LASER PRODUCT"

"CLASS 1
LASER PRODUCT"

NAMES AND FUNCTIONS OF PARTS



❶ Power Switch (POWER)

- Press this switch to turn the power source ON.
- After the power is turned on, the Variable Output level is displayed in the S (sec) portion of the display window, then the Track No. (00) lights up. If no disc is loaded, all number indicators and the calendar light up after several seconds. If a disc has been loaded, the number of tracks on the disc will be displayed in the Track No. display after a few seconds, and the total time will be displayed by the Time display. The Calendar display will stay on until the total number of tracks is displayed, (but will indicate OVER if there are more than 21 tracks on the disc). It will go off when playing starts.

❷ Disc Holder

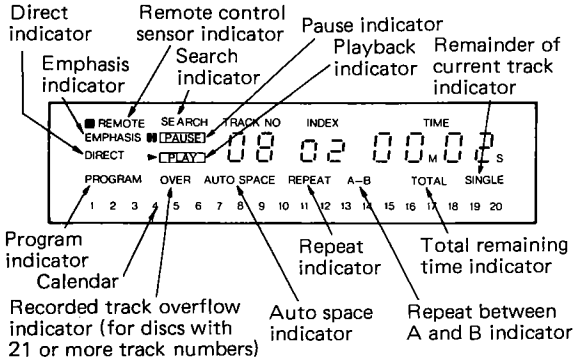
- The disc is loaded into the disc holder for play.
- The disc holder is opened and closed by pressing the disc holder open/close button (▲ OPEN/CLOSE) ❸.
- It can also be closed by pressing the play button (▶ PLAY) ⓲ or pause button (⏸ PAUSE) ⓳.

❸ Disc Holder Open/Close Button (▲ OPEN/CLOSE)

- The disc holder ❷ is opened and closed by pressing this button.
- Press the button once to eject the disc holder ❷ forward. Press it again to close the holder.
- If the disc holder is closed and a disc has been loaded, the disc is rotated for several seconds, and then the total number of tracks on the disc and the total playback time are then displayed on the digital display ❹.

❹ Display

- The display area consists of sections for the track number, the index, the playback time, and the calendar.



❺ Remote Control Photosensitive Window

- This window receives the light transmitted from the wireless remote control unit.
- The RC-202 wireless remote control unit should be operated while it is pointed in the direction of the photosensitive window.
- When the remote control is operated, the remote control sensor indicator lamp will light in the display area ❹.

❻ Auto Edit Button (AUTO EDIT)

- This automatic programming function devided the compact disc, which is recorded on only one side, into two halves, to resemble side A and B of an ordinary analog disc. Total playing time is divided at the break between tracks which is nearest to the 1/2 point. The break is made at the beginning of the track to avoid interrupting the trackduring playback.
- Pressing this button when the player is stopped causes the playback time for the first half of the disc to be displayed for approximately 2 seconds in the TIME display, along with the numbers of the tracks on that side, displayed in the CALENDAR display. Next, the content of the second half of the disc is displayed in the same way.
  The player then moves automatically to the start of the initial track and remains there in the pause state. Play is started by pressing either the Play (PLAY) or the Pause (PAUSE) button. When playing of the first half of the disc is ended, the player pauses automatically at the start of the first track of the second half.
- This function operates only when a disc with 20 or fewer tracks is played.

❼ AUTO SPACE Button (AUTO SPACE)

- Pressing this button will cause the AUTO SPACE indicator to light up and a blank portion lasting 4 or more seconds to be inserted between the tracks. If this button is pressed while the AUTO SPACE indicator is lit, the lamp will go off and the auto space function will be cancelled.
- When the AUTOMATIC SEARCH button (⏮, ⏭) is pressed, the auto space function will not operate.
- The auto space function will operate with programmed playback as well as normal playback.
- Although a blank interval is inserted between tracks when the Auto Space function is operating, the 4-second interval is not added to the time remaining display or to the time display during Auto Edit.

❽ Time Mode Button (TIME)

- This button is used to select the type of information to be read out under the TIME section of the display. Either the elapsed playback time of the current track, the remaining playback time for that track, or the playback time for the

remaining tracks on the disc can be selected.
Normally the elapsed playback time of the current track is displayed. If the button is pressed once, the [SINGLE] indicator lights and the remaining time left to play on the track is displayed. If the button is pressed again, the [SINGLE] indicator goes out, and the [TOTAL] indicator goes on, and the playback time for the remaining tracks left on the disc is displayed. If the button is pressed once more, the [TOTAL] indicator goes out and the display returns to the elapsed playback time for that track.
If the button is pressed so that the [TOTAL] indicator lights during programmed playback, the playback time for all of the remaining programmed tracks is displayed.

⑨ All Button (ALL)
- Press this button to repeat playback.
- When the [ALL] button is pressed, the [REPEAT] indicator lights and repeated playback is performed for all of the tracks on the disc. During programmed playback, all of the tracks programmed into memory are played repeatedly. Press the [REPEAT] button again to cancel the repeat operation.

⑩ One Track Repeat Button (1)
- Press this button when desiring to replay 1 track only. Pressing this button while a track is playing will cause the player to replay that track only. (Refer to page 8).

⑪ A-B Repeat Button (A – B)
- Press this button to perform repeated playback of a desired section between two specified points. (Refer to page 8 for details.)

⑫ Index Button (INDEX)
- Press this button when playing from the index within the tracks. Specify the index No. from the ten key pad.

⑬ Clear Button (CLEAR)
- Use this key to make corrections in the programmed tracks.

⑭ Call Button (CALL)
- Press this button to verify the track numbers that have been programmed into memory.

⑮ Program and Direct Button (PROG/DIRECT)
- Press this button to select the memory program function or direct track selection function.

⑯ +10 Button (+10)
- Press this button to select a track number that is larger than 11.
- The +10 button is used in conjunction with the ten-key pad ⑰. For example, to select track number 15, press the [+10] button and then [5] on the ten-key pad.
- Similarly, to select track number 32, press [+10], [+10], [+10] and then press [2].

⑰ Ten-key Pad (1, 2, 3, 4, 5, 6, 7, 8, 9, 10)
- These buttons are pressed for direct track selection or to program a selection into memory. For example, to play back the third track using the direct selection function, press [3] on the key pad. Track number 3 will then start to play. To play track number 12, press [+10] and then [2].
- To use the keypad in program mode, first press the (PROG/DIRECT) button ⑮ to enter the correct mode.

⑱ Play Button (▶ PLAY)
- Press this button to play a disc.
- When the PLAY button is pressed, the [▶PLAY] indicator lights, and the number of the track being played, the index number, and the elapsed playback time for that track are displayed. The calendar lights to display the all of the playback tracks. The displayed tracks then go out in order as each finishes playing.
- When playback of the last track has finished, the [▶PLAY] indicator goes out, and the machine enters stop state.
- It is also possible to use the PLAY button to close the disc holder after a disc has been inserted. Playback then begins.

⑲ Pause Button (⏸ PAUSE)
- Press this button to stop the playback temporarily.
- If the PAUSE button is pressed during playback, the play is stopped temporarily, the [▶PLAY] indicator goes out, and the [⏸PAUSE] indicator lights.
- To end the pause, push the PLAY button ⑱ or PAUSE button ⑲ again.

⑳ Stop Button (■ STOP)
- Press this button to stop the playback.
- The rotation of the disc stops, and the total number of tracks and the total playback time are read out on the TRACK NO, and TIME sections of the display.
- During programmed playback, the total number of tracks programmed in memory and the total programmed performance time are displayed.

㉑ Automatic Search Reverse Button (⏮)
- Press this button to move the pickup backward, to return to the beginning of the desired track.
- If this button is pressed during playback or pause, the pickup moves back ward to the beginning of the track that corresponds to the number of times the button was pressed.

㉒ Automatic Search Forward Button (⏭)
- Press this button to move the pickup forward and advance to the beginning of the desired track.
- If this button is pressed during playback or pause, the pickup moves forward to the beginning of the track that corresponds to the number of times the button was pressed.

㉓ Manual Search Reverse Button (◀◀)
- Press this button to move playback in fast reverse.
- When the machine is in play, sound will be produced during the time that the button is being pressed and the fast reverse is operating.
- If the button is pressed while the machine is in the pause state, the fast reverse will operate three times faster than the reverse speed when the machine is in the play state. No sound will be produced.

㉔ Manual Search Forward Button (▶▶)
- Press this button to move playback in fast forward.
- Whe the machine is in play, sound will be produced during the time that the button is being pressed and the fast forward is operating.
- If the button is pressed while the machine is in the pause state, the fast forward will operate three times faster than the fast forward speed when the machine is in the play state. No sound will be produced.

㉕ Headphone Jack (PHONES)
- When using headphones, please listen to them at an appropriate volume. (Headphones are sold separately.)

㉖ Volume adjustment knob
- This knob is used to adjust the output level (volume) of the headphone jack.

㉗ Digital Output Switch (DIGITAL OUTPUT)
- Use this switch to turn the digital output terminal signal on and off.
- The digital signal is not output when this switch is off.

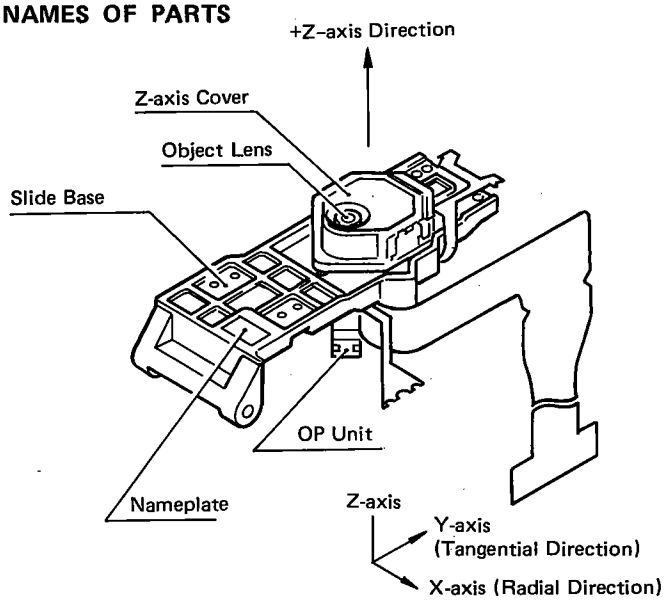
㉘ Output terminal (FIX-VARIABLE)
- Connect the output terminal to the input terminal of the amp. (Refer to page 6 for details on connections.)

㉙ Digital Output Terminal (DIGITAL OUTPUT-COAXIAL)
- This terminal outputs digital data.

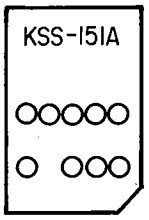
㉚ Digital Output Terminal (DIGITAL OUTPUT-OPTICAL)
This terminal output data as light.
Optical fiber cord used: Tos-Link types TOCP155 or TOCP172.
Caution: Optical fiber cord is sold separately.

NOTE FOR HANDLING OF LASER PICK-UP

• NAMES OF PARTS



• NAME PLATE



Year (last figure)

Lot No. ○○ Day ○ Month ○ Quality Control No. ○

Note: Month indication X, Y, Z signify 10, 11,12.

Iop ○ ○ ○ ○

Control Letter by the Plant | 1 Figure | 1st Decimal Place

10 Figures

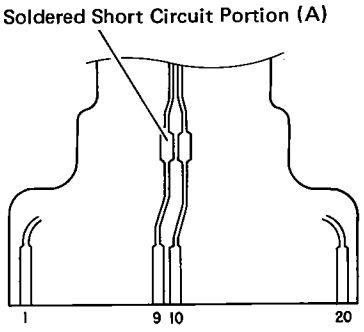
Indication unit is mA omitted a decimal point.

• CONNECTION DIAGRAM OF CONECTOR (1)

KSS 151A Accessory flexible wire terminals.

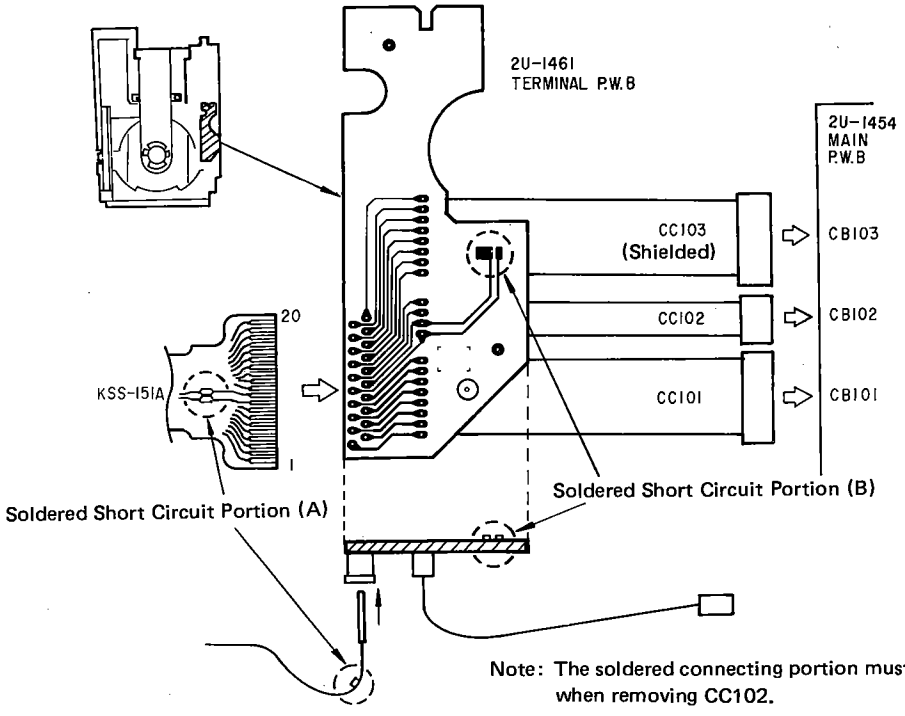
No.	Description
1	Linear motor
2	Linear motor
3	2-axis –F
4	–T
5	+T
6	+F
7	Senser
8	Senser
9	LD GND
10	LD

No.	Description
11	PD
12	VR
13	GND
14	PD D
15	C
16	A
17	B
18	K
19	F
20	E



• CONNECTION DIAGRAM OF CONECTOR (2)

KSS-151A → TERMINAL P.W.B → MAIN P.W.B



Note: The soldered connecting portion must be bridged when removing CC102.

Cautions for Handling the Laser Pick-up

The laser pick-up KSS-151A is assembled and precisely adjusted using a sophisticated manufacturing process in our plant. Do not disassemble or attempt to readjust it. Please keep the following instructions carefully in handling pick-up.

1. General Care

(1) Storage
Do not store the pick-up in dusty, high-temperatured or high-humidity environments.

(2) Please take care for preventing from shock by falling down or careless handling.

2. Laser Diode (LD)

(1) Protect your eyes
The laser beam may damage the human eye, since the intensity of the focused spot may reach 1.3×10^4 W/cm^2 even if the intensity at the object lens is 400 μW maximum. As the light beam spreads after focused through the objective lens, it does not effect you in the place as far as more than 30 cms. However, do not look at the laser light beam either through the objective lens directly nor another lens or a mirror.

(2) Poison of As
Since the LD chip contains As (Arsenic), as GaAs + GaAlAs, as known as the poison, although the poison is relatively weak, in comparing with others, e.g. As_2O_3, $AsCl_3$ etc., and the amount is small, avoid putting the chip in acid or an alkali solution, heating it over 200°C or putting it into your mouth. . . . .

(3) Avoid surge current or electrostatic discharge
The LD may be damaged or deteriorated by it's own strong light if a large current is supplied to it, even if only a short pulse.
Make sure that there is no surge current in the LD driving circuit by switches or else. Be careful to handle pick-up as it may be damaged in a moment by human electrostaic discharge. The pins of the LD are short-circuited by solder for protection during shipment (Soldered short circuit portion (A)].
For safety handling of an LD, grounding the human body, measuring equipments and jig is strongly recommended. And still it is further desirable to make use of mat on the platform and floor for handling the LD.
To open the short circuit, remove the soldering quickly with a soldering iron whose metal part is grounded. The temperature of the soldering iron should be less than 320°C (30W).

3. X-axis Actuator

(1) The performance of the actuator may be effected if magnetic material is located nearby, since the actuator has a strong magnetic circuit. Do not permit dust to enter through the clearance of the cover.

(2) **Cleaning the lens**
It may change the specifications when dust or dirt is stuck on the object lens.
For cleaning, use a dry lens cleaning paper applying no excessive pressure to the lens. If it is difficult to remove it, moisten the paper with a little amount of water. At this time never drip water other than the lens portion.

4. The Metal Bearing

The metal bearing of Cu-compound sintered alloy is impregnated with oil. However, supply oil with the specified oil Froil 0147P, at the pick-up replacing time. You do not normally need lublicate the bushing in initializing time nor supplying oil in running time.

5. Handling

Please handle the laser pick-up with holding by optical base.
When either a part of human body or some other things may happen to touch directly with the circuit part of either the LD or PD PCB, it may cause deterioration, take careful attention in handling this base.

6. Deterioration of Laser Pick-up

When difficulty occurs either in focus or tracking adjustment nor able to adjust the focus or tracking, it seems that the laser pick-up is deteriorated. In these cases, check a value of laser diode current and give a decision for deterioration.

7. Fundamental Deterioration Decision of Laser Pick-up

(1) If a voltage value across Pin ⑥ of TP102 (+5V) and Pin ② (iop) of Unit (2U-1454) is V1, the value of laser diode current "iop 1" can be found a formula
$\text{iop } 1 = \frac{V1}{22}$.

(2) If a "iop" exceeds ±10% compared with the IOP indication on the laser pick-up mameplate, there is a fair chance for deterioration when it is checked under a circumambient temperature 23°C.

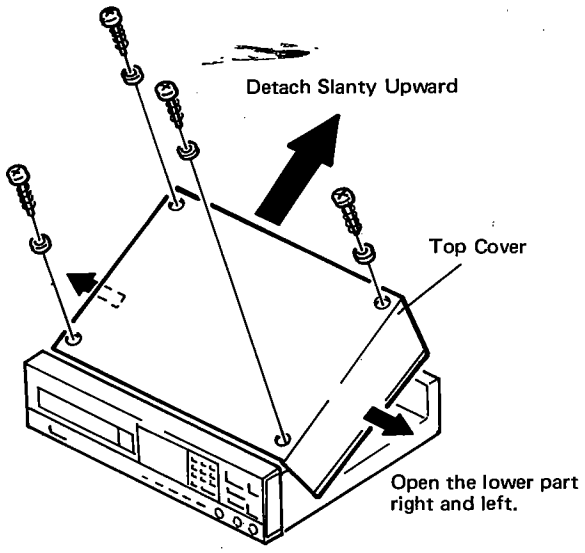
(3) When the circumambient temperature changes ±10°C, "iop 1" will change ±5%. The "iop 1" will also be changed the passage of time.

(4) In case of the above conditions taking into consideration and performed the adjustment in proper way, if the HF level across pin ① and across (HF) GND of TP102 in 2U-1454 becomes 0.6V or less values; or a gitter occurs great, the laser pick-up is may be deteriorated.

DISASSEMBLY

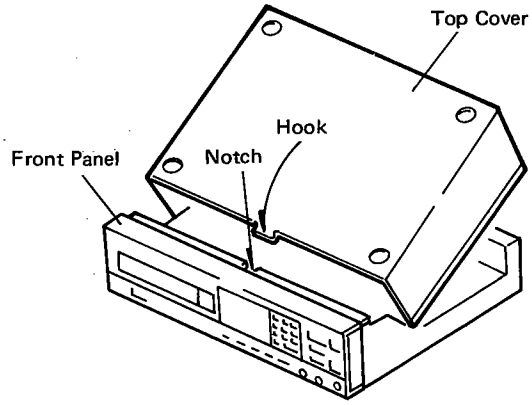
- **Top Cover**

1. Remove 4 screws on upper side of the Top Cover.
2. Pull the Top Cover slantwise upward with opening the bottom parts slithgly right and left.

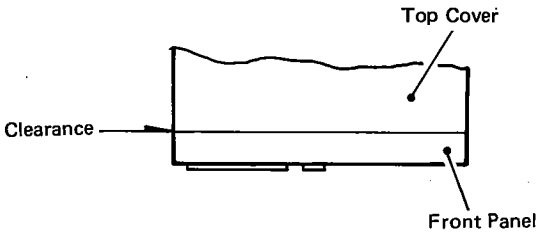


(Caution in assembling Top Cover)

1. Couple the hook in the center position of the Top Cover with the notch part of Front Panel.

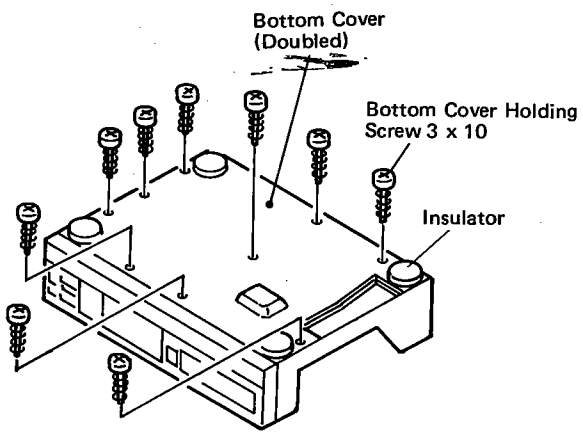


2. Make the setting as no clearance between Front Panel and the Top Cover viewing from the upper side of the setting.



• Bottom Cover

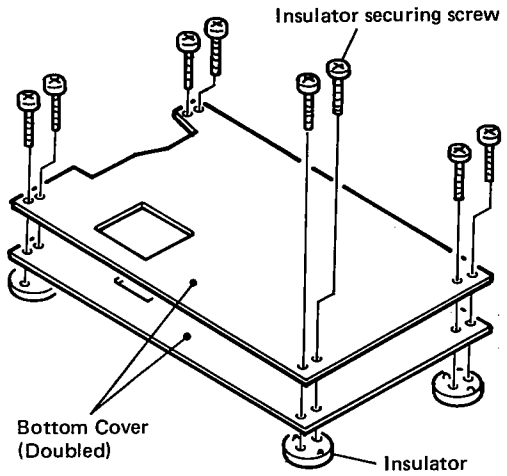
1. Remove 9 screws holding the Bottom Cover and detach the Bottom Cover with the Insulaters attached.



• Insulator and seperating the Double Bottom Cover

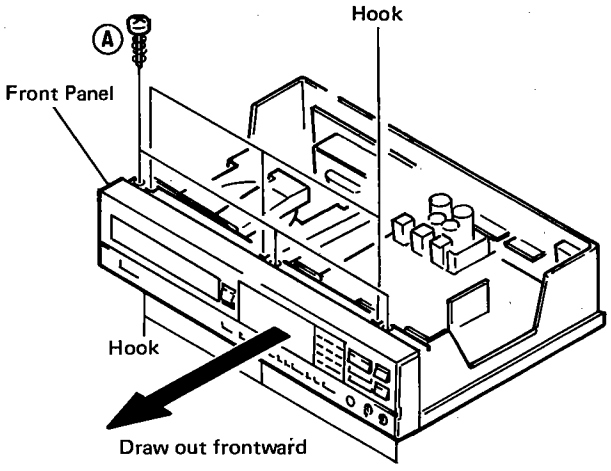
Detach the Bottom Cover, and remove 8 screws securing the Insulators to take out Insulators and separate Doubled Bottom Cover.

Note: The hook may break if it is pushed top firmly. A square hole on the front panel as a stopper to insert a ⊕ screwdriver (approx. ϕ6) not coming into top far.



• Front Panel

1. Remove the Top Cover, and unfasten 3 screw (A) on the upper side.
2. Push and release 3 each hooke on the upper and lower sides. Then draw out the Front Panel frontward and detach it.



FG-610 LASER PICK-UP MECHANISM

- **How to move the Looder Frame manually**
  Manually push the lock arm (A) to the rightward and pull the Loader frontward, then the Loader can be open/close manually.

- **Whole body of the Laser Pick-up Mechanism FG-610**
  Removing 4 screw (B) makes possible to detach whole body of the Laser Pick-up Mechanism from the Chassis.

- **Loader Frame**
  Remove whole body of the Laser Pick-up Mechanism FG-610, pull the Loader Frame (28) frontward, lift the Loader Rail (34) upward and pull it out backward, then the Loader Frame can be taken out.

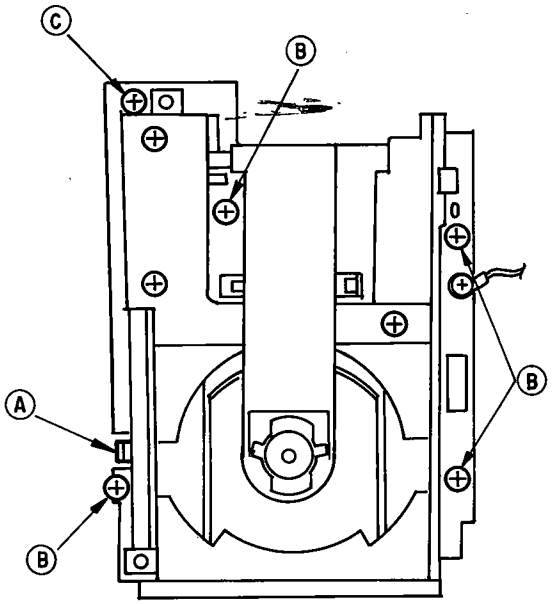
- **Housing Assembly**
  Remove 4 screw (A)1 ~ (A)3, and detach the Assembly composed of Laser Pick-up Magnet, Yoke, Turntable, and Spindle Motor.
  By removing of screw (A), the parts for mechanism floating can be taken down as illustration shows.
  When reassembling, remind that the Washer and H-damper are commonly used, but the Coil Spring and Collar are provided two types for maintaining equilbrium.

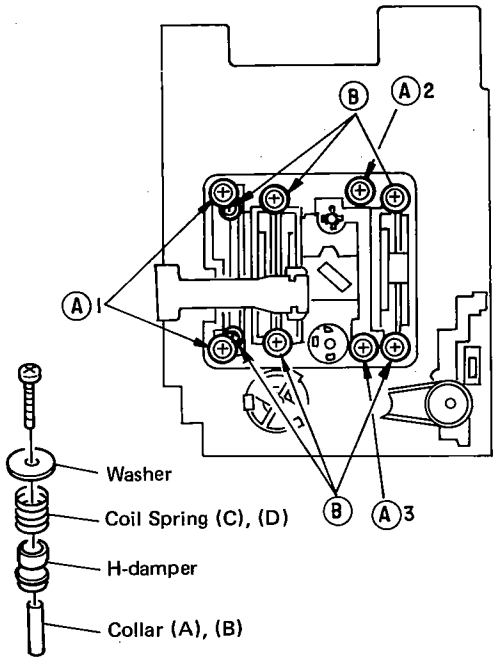
A – 1	4630515 000 COIL SPRING (D)	433 0484 004 COLLAR (A)
A – 2	463 0515 000 COIL SPRING (D)	433 0485 003 COLLAR (B)
A – 3	463 0514 001 COIL SPRING (C)	433 0485 003 COLLAR (B)

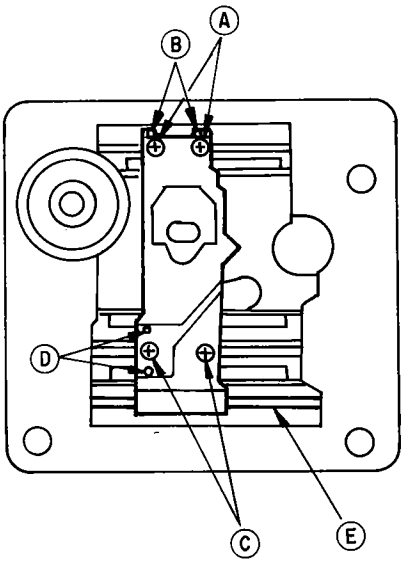
- Coil spring (D) (used 3 each) is marked in red.
- Coil spring (C) (used 3 each) is not marked.
- Collar (B) (used 2 each) is made of brass (yellow).
- Collar (A) (used 2 each) is made of brass plated with nickel (white)

- **Laser Pick-up KSS-151A**

(1) Detach the Housing Assembly illustration.
(2) Remove 2 screws (A), unsolder 2 portions (B), and detach the Speed Detection Coil.
(3) Next, remove 2 screws (C), unsolder 2 portions (D), and detach the Drive Coil. And pull out the Shaft at portion (E), then the Lase Pick-up can be taken out.







MAINTENANCE SERVICE AND ADJUSTMENT

Changing and/or repairing component parts may necessitate readjustment. The microcomputer employed in this unit contains maintenance service program. All necessary adjustment can be made via operation buttons in front normally used to play the unit.

1. Initializing maintenance service program.

(1) Turn power OFF.
(2) Short-circuit pins (3) and (4) of TP102 in the signal processing PCB (2U-1454).
(3) Turn power ON. The service program initializes and 01 displays on the track number indicator. 2 figures also displays on the time indicator's second part has no relation with the service program.

Note) When the service program is initialized, the unit comes into service use only and does not accept normal operation.

2. Button operations during the service mode.

(1) ▲ OPEN/CLOSE Button
Opens or Closes the disc holder in the state of disc rotation being stopped. Note that when the holder is in operation, all other buttons are inoperative, until the holder operation completed.

Note) Be sure to remove the short circuit or reconnect the connector which disconnected to initialize the service program. Otherwise the Open/Close does not function correctly.

(2) ■ STOP Button
Stops the system. Track number indicator displays 01. Push the button when the servo adjustment completed, or when redo it.

(3) ▶ PLAY Button
Turns focus servo on and starts the disc. When a sequential functions ends, the track number indicator display 02. Use it to adjust tracking offset.

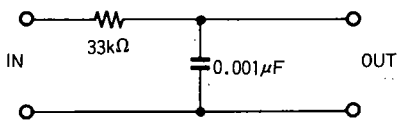
(4) ❚❚ PAUSE Button
Turns all functions of focus servo, tracking servo, slide servo and spindle servo on. When a sequential functions ends, the track number indicator displays 03. When the PLAY has already been pushed, turns both tracking servo and slide servo on.

(5) Other buttons
Other buttons previously not mentioned are for factory use. Some of the buttons have specific functions like checking IC. Operation of these buttons could invite incorrect CD player operation. Therefore never operate buttons which are not previously explained how to use. If these buttons are accidentally pushed, turn power off immediately and initialize the service program again. Also never use remote controller when the service program is in operation.

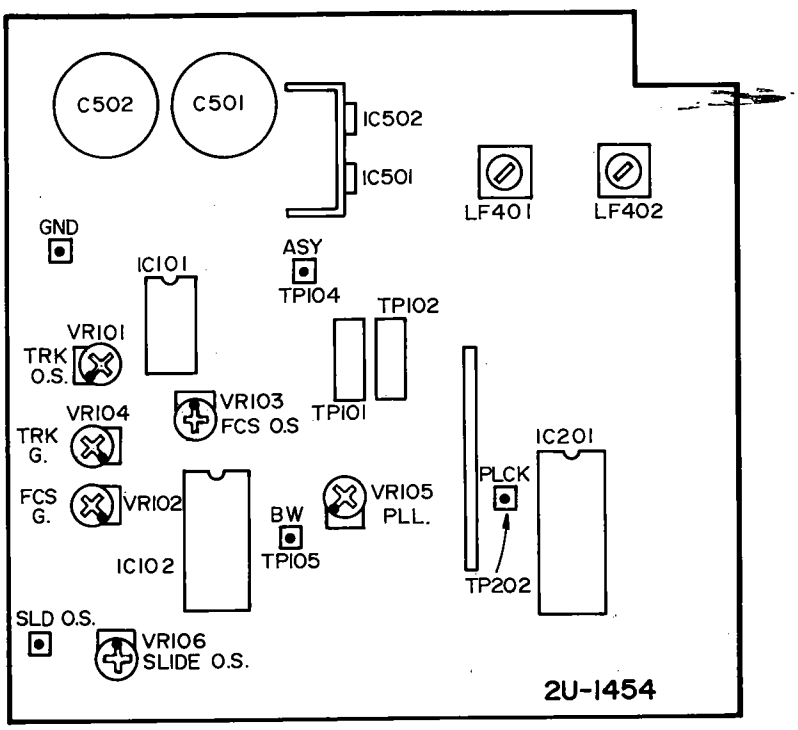
3. Adjustment

(1) Precaution to the Adjustment:
The super linear convertor employed in this unit requires no adjustment, except a specific case.

(2) Equipment required
1 Dual mode oscilloscope
2 Specific disk for adjustment
3 Audio oscillater
10 Hz ~ 10 kHz, Output: 0 V ~ 3 Vp-p
4 Frequency counter
Readable to over 5 MHz
5 Filter (Network) for measurement



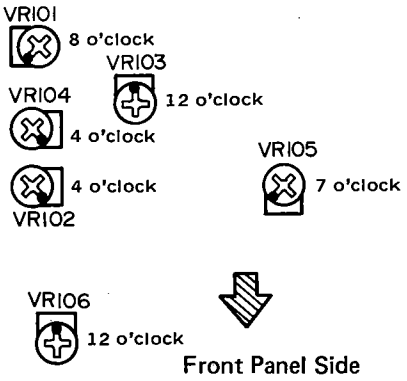
(3) Setup



Front Panel Side

① Confirm the power is OFF, short-circuit pins ③ and ④ of TP102. Then turn ON the power, and initialize the service program. Confirm the track number indicator displays [0 1], then revert the connection of connector.
② Preset VR101 ~ 106 as per following.
③ Make adjustment in the order of

1. PLL
2. Slide offset
3 Track offset
4 Focus gain
5 Focus offset
6 Tracking gain
7 Tracking offset (Recheck)



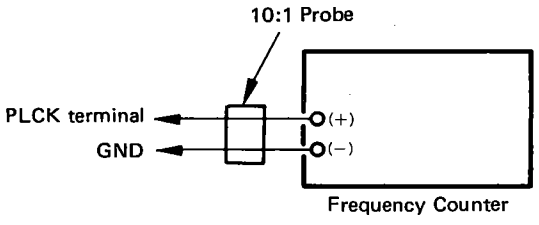
(4) PLL

① Precaution
- Confirm the service program is initialized, and the disc is not loaded or the disc is stopped.
- Ground the test points TP104 (ASY) and TP105 (BW).

② Equipment setup
Connect test point TP202 (PLCK) terminal to the frequency counter + side via a 10:1 probe used for oscilloscope and ground – side to the GND.

③ Adjustment
Adjust VR105 with a screwdriver so that the frequency counter reads 3.50 MHz. ± 10 kHz.

④ After the Adjustment
- Remove ground from test points TP104 (ASY) and TP105 (BW).
- Disconnect frequency counter.

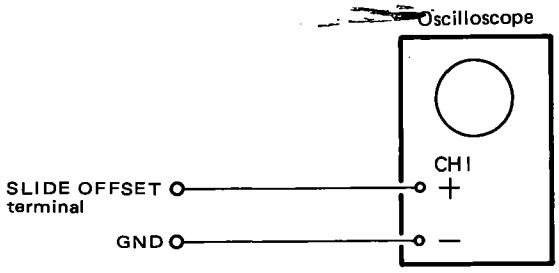


(5) Slide offset

① Confirm the STOP mode (indicating [ ]).

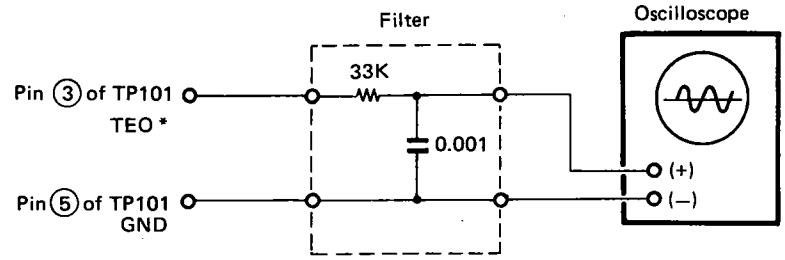
② Connection of measuring equipment.
Connect test point (SLIDE OFFSET) located the side of VR106 to the oscilloscope + side, and ground – side to the GND.
Ground the input terminal of oscilloscope to confirm the base line. Then select oscilloscope input mode at DC range, sweep time as 1ms ~ 2ms/div, sensitivity as high (0.02 V ~ 0.05 V/div when 10:1 probe is used) to make judging 0.1 V.

③ Adjustment
Adjust VR106 so that the waveform becomes 0V ± 0.1 V on the oscilloscope.



(6) Tracking offset

① Equipment setup



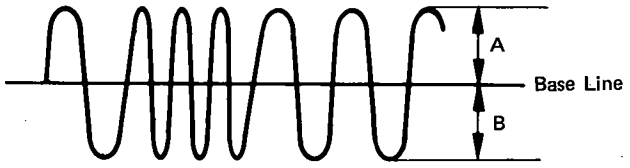
*TEO : Tracking Error Out

② Push ▲ OPEN/CLOSE button to open the holder, put the disc for adjustment on the tray, and push the button again to close the holder. When the service program is initialized, the laser P.U. is set to the optimum position.

③ Push ▶ PLAY button to start the disc.

④ Ground the oscilloscope input terminal to confirm the base line, and set the oscilloscope input to DC range, 0.1 V/div (when 10:1 probe is used), and sweeping time as 1 ms ~ 2 ms/div.

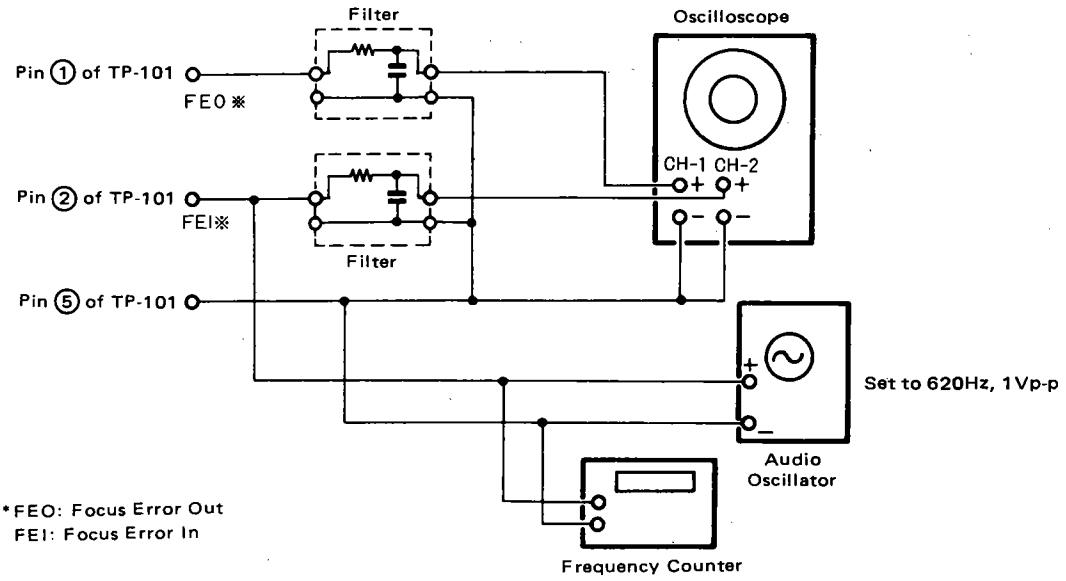
⑤ Adjust VR101 so that the amplitude of A equals B as per figure on the right.



(7) Focus gain

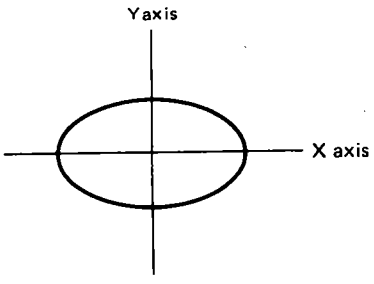
① Push ⏸ PAUSE button.

② Equipment setup

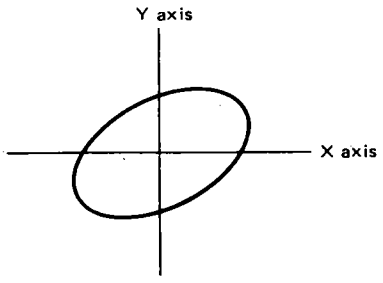


③ Adjustment

- Set the audio oscillator output to 620 Hz, 1.0 Vp-p (±0.1 V).
- Select oscilloscope input in X-Y mode so to observe Lissajous waveform (Select DC range for both X and Y inputs).
- Adjust VR102 so that each Lissajous waveform symmetrizes X and Y axes. (Adjust each input phase 90°)



Correct waveform

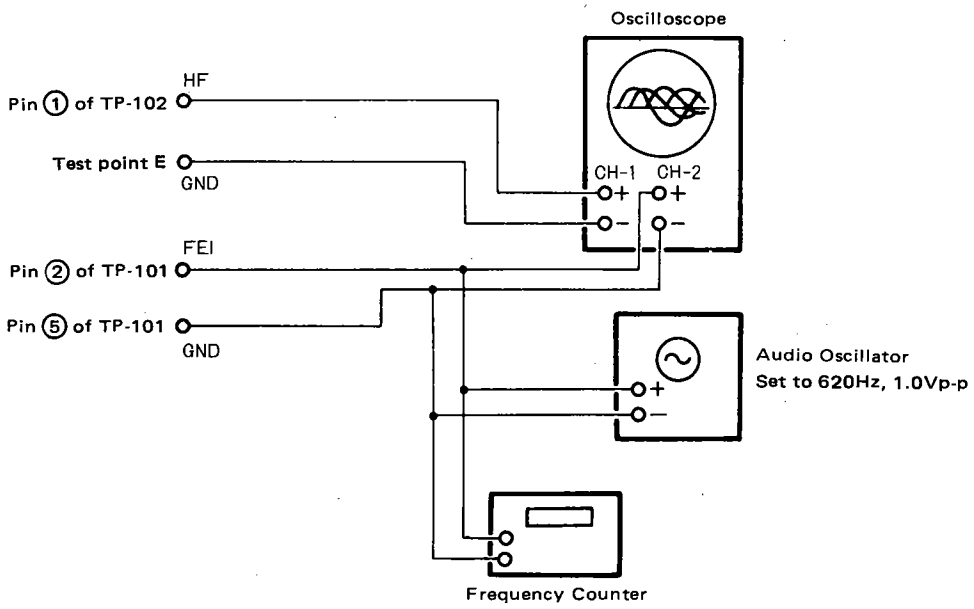


Incorrect waveform

(8) Adjustment of Focus Offset

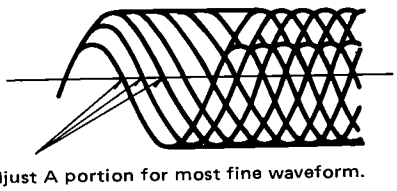
① Adjust it in the same condition as to focus gain in the state of all the servos are operated by pushing PAUSE Button except the measuring equipment connections.

② Connection of measuring equipment

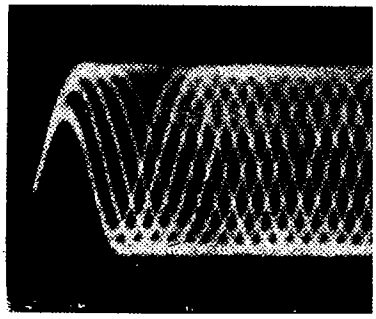


③ Adjustment

- Set the output of audio oscillator to 620 Hz, 1.0 Vp-p(±0.1V).
- Select oscilloscope input mode at "ALTERNATE" or "CHOPPER" and set it to 50 mV/div or 20 mV/div (use 10:1 probe). Observe by setting the sweep time to 0.2 or 0.5 μs/div range.
- A waveform to observe in this time called "Eye Pattern".
- Adjust VR-103 for a minimum jitter amount.



Adjust A portion for most fine waveform.

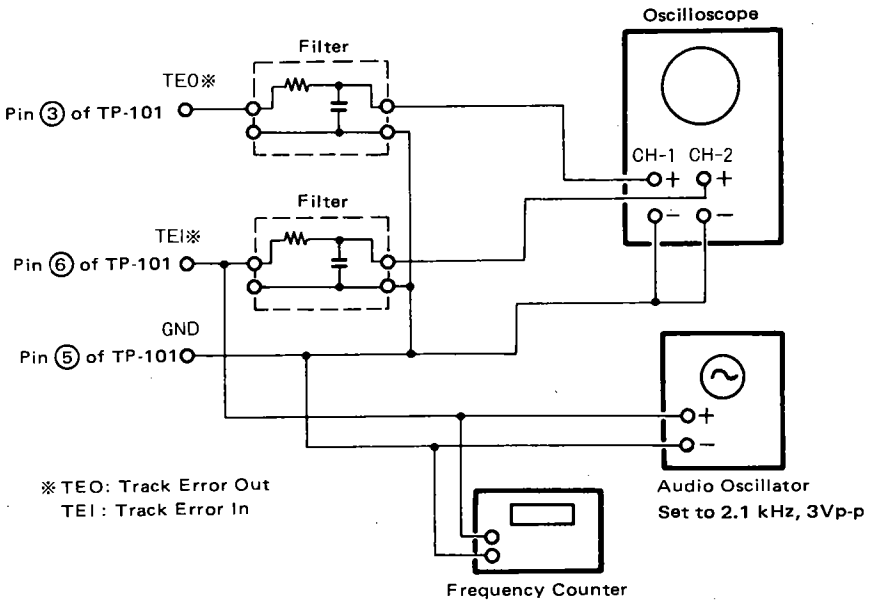


(9) Adjustment of Tracking Gain

① Adjust it in the same condition as to focus gain in the state of all the servos are operated by pushing ‖ PAUSE Button except the measuring equipment connections.

② Audio oscillator should be connected while the servo is in operation.
If the connection is made before servo operation, causing mis-operation.
If the connection is made in failure, disconnect oscillator, push stop button (■ STOP) to stop all operations, and follow the steps from the beginning. Then push the pause button (‖ PAUSE) to activate the servo operation again.

③ Connection of measuring equipment.
Connect all kinds of measuring equipment setting to each Test Points of TP101 as below figures.



④ Adjustment

- Set the output of audio oscillator to 2.1 kHz 3 Vp-p ± 0.1 V.
- Select oscilloscope input at X-Y mode so to observe Lissajous waveform. (Select DC range both X and Y inputs.)
- Adjust VR-104 and obtain Lissajous waveform symmetric to both X and Y axes. The waveform is the same as focus gain adjustment.

(10) Checking of Tracking Offset (Recheck)

① Check the adjustment performed in the previous column (6).

- Push stop button (■ STOP) to stop disc revolution.
- Push play button (▶ PLAY) and check that the disc starts to run.

Note: The microcomputer employed in the unit sometimes does not accept button operation. If so, push the button again, and confirm that the track number indicator displays "02".

- Observe a waveform and check that the height of upper and lower waveform are even to the base line. (Reference value: Difference of height between two is 5% or less.)
- If the difference is beyond the value, adjust VR-101.

② That is all to complete adjustments.

- Push the stop button (■ STOP) to stop disc revolution, and push open/close button revolution, and push open/close button (▲ OPEN CLOSE) to open the holder and remove the adjustment disc.

• Remote Control IC (LU59001) Terminal Function List

Terminal No.	Function	Terminal No.	Function
1	Serial Data Output	11	Remote Control Code Input Input Code for Remote Control out of RM577
2	+5 V		
3	Shift Clock Input	12	System Address GND Earth
4	RDY Output	13	System Address GND Earth
5	+5 V	14	System Address GND Earth
6	455 kHz OSC	15	System Address GND Earth
7	455 kHz OSC	16	GND
8	–GND Earth	17	+5 V
9	ACL Input	18	System Address +5 V
10	GND	20	VDD +5 V

PARTS LIST OF P.W. BOARD

2U-1454A SERVO & SIG. UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTOR GROUP			
IC101	2620842002	CXA-1081S (S-DIP)	
IC102	2620843001	CXA-1082AS (S-DIP)	
IC103	2630257001	M5218P	
IC104	2630244001	NJM082D	
IC105	2620522005	TC-4053BP	
IC201	2620839002	HD63A05Y0-C23P	
IC202	2620745002	HD74HC42	
IC203	2620635002	LU59001	
IC205	2620517007	MSL-917RS	
IC204 206	2630298002	LB1240	
IC207	2630423000	M51953B	
IC208	2620729002	HD74HC08P	
IC209	2620593005	HD74HC04P	
IC401 402	2620836005	PCM56P-J	
IC403 404	2620419008	HD14053BP	
IC405~ 408	2630360008	NE5532	
IC409	2620419008	HD14053BP	
IC410	2620640000	MN6632A	
IC411 412	2630257001	M5218P	
IC413	2630485006	NJM4556S	
IC400	2620844000	SM5807B	
IC501	2630467008	HA17812W	
IC502	2630190003	NJM79M12A	
IC503	2630464001	HA17805W	
IC504	2630272002	NJM79M05A	
IC505	2630464001	HA17805W	
IC506	2630432004	NJM78L05A	
IC507 508	2680063009	ICP-F20	
IC414	3939269003	PC-817	
TR101	2720025004	2SB562(C)	
TR102	2740065044	2SD880(Y)/(GR)	
TR103	2720058013	2SB834(Y)/(GR)	
TR104	2740065044	2SD880(Y)/(GR)	
TR105	2720058013	2SB834(Y)/(GR)	
TR106	2740006002	2SD468(C)	
TR107	2720025004	2SB562(C)	
TR109	2730178022	2SC1740(R/S)	
TR110	2740065044	2SD880(Y)/(GR)	
TR111	2720058013	2SB834(Y)/(GR)	
TR112	2740006002	2SD468(C)	
TR113	2720025004	2SB562(C)	
TR114	2730178022	2SC1740(R/S)	
TR115	2690025901	RN1202(10k-10k)	
TR116	2730178022	2SC1740(R/S)	
TR201	2690025901	RN1202 (10k-10k)	
TR202	2690026900	RN2202(10k-10k)	
TR401~ 408	2730253015	2SC2878(A/B)	
TR409 410	2690026900	RN2202 (10k-10k)	
TR501	2720025004	2SB562(C)	
D101,102	2760049008	1S2076	
D201	2760049008	1S2076	
D202~ 207	2760370007	1SS106	
D208,405	2760049008	1S2076	
D401~ 404	2760236031	HZ5C-1	
D501,502	2760405008	S1WB(A)10	
D503	2760433902	DSM1A2	
D504	2760224014	HZ30-2	
D505	2760303003	HZ6C-2	
D506	2760049008	1S2076	
D507	2760433902	DSM1A2	
RESISTOR GROUP			
VR101 102	2116064051	V06PB203	20kΩB
VR103	2116064006	V06PB103	10kΩB
VR104	2116064051	V06PB203	20kΩB
VR105	2116064064	V06PB102	1kΩB
V401,402	2116064022	V06PB104	100kΩB
VR450	2110459002	V1220Q25FA103	10kΩB
VR106	2116064019	V06PB473	47kΩB
R107	2452148000	RN14K2E360G	36Ω ¼W
R108	2452153008	RN14K23560G	56Ω ¼W
CAPACITOR GROUP			
C101	2544260061	CE04W1H3R3M	3.3μF 50V
C102	2551120055	CQ93M1H272J	0.0027μF 50V
C103	2533617007	CC45SL1H390J	39pF 50V
C104	2544252037	CE04W1C101M	100μF 16V
C105	2544260032	CE04W1HR47M	0.47μF 50V
C106	2551121025	CQ93M1H103J	0.01μF 50V
C107	2561034018	CF93A1H333J	0.033μF 50V
C108	2551121025	CQ93M1H103J	0.01μF 50V
C109	2561034018	CF93A1H333J	0.033μF 50V
C110~ 112	2539036006	CK45=1E104Z	0.1μF 25V
C113,114	2533603008	CC45SL1H100D	10pF 50V
C121	255H21041	CQ93M1H153J	0.015μF 50V

●The carbon resistors at 1/4W, 1/6W are not listed herein.

Ref. No.	Part No.	Part Name	Remarks
C122	2561034047	CF93A1H563J	0.056μF 50V
C123,124	2544260058	CE04W1H2R2M	2.2μF 50V
C125~127	2539036006	CK45=1E104Z	0.1μF 25V
C128	2551120068	CQ93M1H332J	0.0033μF 50V
C129	2533603008	CC45SL1H100D	10pF 50V
C130,131	2544260061	CE04W1H3R3M	3.3μF 50V
C132,133	2544254019	CE04W1C220M	22μF 16V
C151	2533636004	CC45SL1H241J	240pF 50V
C154	2551121025	CQ93M1H103J	0.01μF 50V
C155	2539036006	CK45-1E104Z	0.1μF 25V
C156	2561034050	CF93A1H683J	0.068μF 50V
C157	2544254019	CE04W1C220M	22μF 16V
C158	2544254006	CE04W1C100M	10μF 16V
C159	2561034018	CF93A1H333J	0.033μF 50V
C160	2551121067	CQ93M1H223J	0.022μF 50V
C162	2533645008	CC45SL1H561J	560pF 50V
C163	2551120068	CQ93M1H332J	0.0033μF 50V
C164	2551121025	CQ93M1H103J	0.01μF 50V
C165,166	2561035059	CF93A1H474J	0.47μF 50V
C167	2544260058	CE04W1H2R2M	2.2μF 50V
C168	2551120097	CQ93M1H562J	0.0056μF 50V
C171	2551120000	CQ93M1H102J	0.001μF 50V
C172	2561034076	CF93A1H104J	0.1μF 50V
C173	2551121025	CQ93M1H103J	0.01μF 50V
C174	2539036006	CK45=1E104Z	0.1μF 25V
C175	2544254019	CE04W1C220M	22μF 16V
C176	2539036006	CK45=1E104Z	0.1μF 25V
C177	2544260045	CE04W1H010M	1μF 50V
C178	2551120084	CQ93M1H472J	0.0047μF 50V
C179	2539036006	CK45=1E104Z	0.1μF 25V
C182	2544260045	CE04W1H010M	1μF 50V
C183,184	2539036006	CK45=1E104Z	0.1μF 25V
C191	2533627000	CC455SL1H101J	100pF 50V
C192	2539036006	CK45=1E104Z	0.1μF 25V
C201	2544260029	CE04W1HR33M	0.33μF 50V
C202	2590002011	EECF5R5U104	
C203,204	2533635005	CC45SL1H221J	220pF 50V
C205	2544254022	CE04W1C330M	33μF 16V
C206,207	2533643000	CC45SL1H471J	470pF 50V
C208~211	2539036006	CK45=1E104Z	0.1μF 25V
C212	2531027000	CK45F1H104Z	0.1μF 50V
C400	2539036006	CK45=1E104Z	0.1μF 25V
C401	2534342041	CC45SL1H050C	5pF 50V
C402	2533627000	CC45SL1H101J	100pF 50V
C403	2539036006	CK45-1E104Z	0.1μF 25V
C404	2533627000	CC45SL1H101J	100pF 50V
C405,406	2544256075	CE04W1E471M	470pF 25V
C407,408	2544256088	CE04W1E102M	1000μF 25V
C409,410	2554210098	CQ09P1H471J	470pF 50V

Ref. No.	Part No.	Part Name	Remarks
C411,412	2551134038	CQ92M1H223J	0.022μF 50V
C413,414	2539036006	CK45=1E104Z	0.1μF 25V
C415,416	2554214049	CQ09P1H821J	820pF 50V
C417,418	2554210043	CQ09P1H152J	0.0015μF 50V
C419,420	2554214023	CQ09P1H222J	0.0022μF 50V
C421,422	2533614000	CC45SL1H300J	30pF 50V
C423,424	2544190018	CE04W1H101=(AWD)	100μF 50V
C425,426	2533615009	CC45SL1H330J	33pF 50V
C427,428	2544254048	CE04W1C101M	100μF 16V
C430~434	2539036006	CK45-1E104Z	0.1μ F 25V
C437,438	2531024003	CK45F1H103Z	0.01μF 50V
C439	2544256059	CE04W1E221M	220μF 25V
C446	2539036006	CK45=1E104Z	0.1μF 25V
C447,448	2533603008	CC45SL1H100D	10pF 50V
C449	2539036006	CK45=1E104Z	0.1μF 25V
C450,451	2544256020	CE04W1E330M	33μF 25V
C452	2539036006	CK45=1E104Z	0.1μF 25V
C501,502	2544190050	CE04W1H332=(AWD)	330μF 50V
C503,504	2544255005	CE04W1C332M	3300μF 16V
C507~509	2544163016	CE04W1C331M	330μF 16V
C510	2544180002	CE04W1J470M	47μF 63V
C511	2539036006	CK45=1E104Z	0.1μF 25V
C514	2544261028	CE04W1H101M	100μF 50V
C701	2539036006	CK45=1E104Z	0.1μF 25V

OTHER PARTS GROUP

	4178028101	HEAT SINK	IC501,502
	4150307002	INSULATING SHEET	
	4150308001	BUSH	
	4170253013	RADIATOR	IC503~505
X401	3990036013	X'TAL (16.9344MHz)	
X201	3990035001	CST 6.00MT	
X202	2610037005	CSB455E	
	4990079008	BX-1407	
	2048209010	H/P JACK	
	2124652002	ROTARY SW	
	2124407011	TACK SWITCH	
	2124388004	TACT SWITCH	
	3934038006	FIP10QM7	
	4122007000	EARTH PLATE	
	2048242006	1P PIN JACK	
	2048114024	4P PIN JACK	
L401,402	2350044002	L.P.F. COIL	
	2318060002	PULSE TRANS	

•The carbon resistors at 1/4W, 1/6W are not listed herein.

Ref. No.	Part No.	Part Name	Remarks
TP101	2050190065	6P NH CONNECTOR	
102		BASE	
201			
CB101	2050321083	8P CONNECTOR	
		BASE (RED)	
CB102	2050271049	4P PH CONNECTOR	
		BASE	
CB103	2050271081	8P PH CONNECTOR	
		BASE	
CB104	2050323036	3P CONNECTOR	
		BASE (BLK)	
CB105	2050322037	3P CONNECTOR	
		BASE (BLUE)	
CB201	2050271036	3P PH CONNECTOR	
		BASE	
CB202	2050321038	3P CONNECTOR	
		BASE (RED)	
CB203	2050271036	3P PH CONNECTOR	
		BASE	
CB401	2050271052	5P PH CONNECTOR	
402		BASE	
CB501	2050190094	9P NH CONNECTOR	
		BASE	
CB209	2050154030	3P NH CONNECTOR	
		BASE	
CB210	2050271036	3P PH CONNECTOR	
		BASE	
	2350049007	BEAD INDUCTOR	
	4140424005	SHIELD PLATE (A)	
	2690052000	TOT x 172	
CB710	2050271036	3P PH CONNECTOR	
		BASE	
KU-5862 DIGITAL SIG. PRO. UNIT			
IC001	2620736008	CXD1125	
IC002	2620673006	HM6116FP-4	
C003	2539036006	CK45=1E104Z	0.1μF 25V

⚠ KU-578B LINE FILTER UNIT (Europe model)

Ref. No.	Part No.	Part Name	Remarks
C521 ~523	2538014003	CK45F2GAC103M	0.01μF 400VAC
CH501	2398019002	LINE FILTER COIL	
	2123336002	POWER SW	
	2042053026	9P CONNECTOR CORD	
	2050185067	6P WIRE HOLDER	
	2050185041	4P WIRE HOLDER	
	4150299000	CONDENSER COVER	
F1	2061031032	FUSE	(0.16A)
	2020022008	FUSE HOLDER	
F2,3	2061015003	FUSE	(500mA)

⚠KU-578F LINE FILTER UNIT (Australia model)

Ref. No.	Part No.	Part Name	Remarks
C521 ~523	2538014003	CK45F2GAC103M	0.01μF 400VAC
CH501	2398019002	LINE FILTER COIL	
	2123336002	POWER SW	
	2042053026	9P CONNECTOR CORD	
	2050185067	6P WIRE HOLDER	
	2050185041	4P WIRE HOLDER	
	4150299000	CONDENSER COVER	
F1	2061031032	FUSE	(0.16A)
	2020022008	FUSE HOLDER	

⚠KU-578P/Q LINE FILTER UNIT (EU, EC) (U.S. and Canadian model)

Ref. No.	Part No.	Part Name	Remarks
C521 ~523	2538014003	CK45F2GAC103M	0.01μF 400VAC
CH501	2398019002	LINE FILTER COIL	
	2123336002	POWER SW	
	2042053026	9P CONNECTOR CORD	
	2050185067	6P WIRE HOLDER	
	2050185041	4P WIRE HOLDER	
	2020022008	FUSE HOLDER	EC only
F2,3	2061039018	Fuse 0.8A	EC only

⚠KU-578D LINE FILTER UNIT (U.K. model)

Ref. No.	Part No.	Part Name	Remarks
C521 ~523	2538014003	CK45F2GAC103M	0.01μF 400VAC
CH501	2398019002	LINE FILTER COIL	
	2123336002	POWER SW	
	2042053026	9P CONNECTOR CORD	
	2050185067	6P WIRE HOLDER	
	2050185041	4P WIRE HOLDER	
	4150299000	CONDENSER COVER	
F1	2061031032	FUSE	(0.16A)
	2020022008	FUSE HOLDER	
F2,3	2061015003	FUSE	(500mA)

⚠KU-578E LINE FILTER UNIT (Multi voltage model)

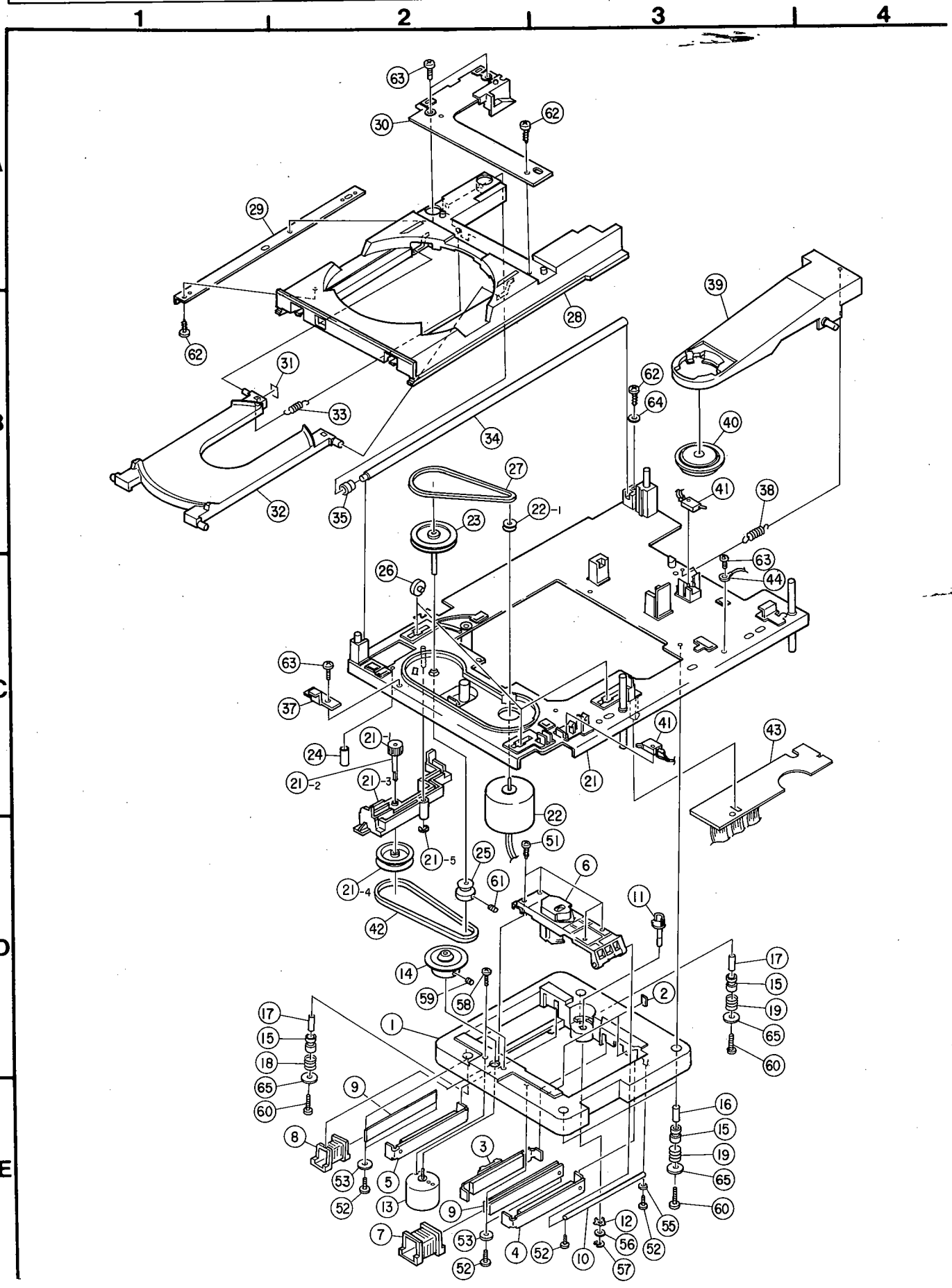
Ref. No.	Part No.	Part Name	Remarks
C521 ~523	2538014003	CK45F2GAC103M	0.01μF 400VAC
CH501	2398019002	LINE FILTER COIL	
	2123336002	POWER SW	
	2042053026	9P CONNECTOR CORD	
	2050185067	6P WIRE HOLDER	
	2050185041	4P WIRE HOLDER	
F1	2061015003	FUSE	(500mA)
	2020022008	FUSE HOLDER	
	5138254037	FUSE LABEL	
	2050217045	4P CON. BASE (ULTR)	

WARNING:
Parts marked with ⚠ and/or shading have special characteristics important to safety.
Be sure to use the specified parts for replacement.

Remarks symbols in the parts list refer to the following countries and areas.

EA:	Australia	EC:	Canada
E1:	Multiple voltage model	EU:	U.S.A.
E2:	European continent	EK:	United Kingdom

EXPLODED VIEW OF FG-610 MECHA UNIT



PARTS LIST OF FG-610 MECHANISM UNIT

Ref. No.	Part No.	Part Name	Remarks
1	3150338108	P.U. HOUSING	
2	4610336005	STOPPER	
3	PM01A15	MAGNET SUB ASS'Y	
4	PM01A20	MAGNET SUB ASS'Y	
5	PM01A21	MAGNET SUB ASS'Y (C)	
6	4990078009	PICK-UP KSS151A	
7	2390014102	M. COIL ASS'Y	
8	2390015101	G. COIL ASS'Y	
9	4330480008	YOKE (B)	
10	4430617108	P.U SHAFT	
11	4210431106	STOPPER COLLAR	
12	3158451003	FRICTION WASHER	
13	2170159009	SPINDLE MOTOR	
14	4210423004	TURN TABLE	
15	4620083005	H. DAMPER	
16	4330484004	COLLAR (A)	
17	4330485003	COLLAR (B)	
18	4630514001	COIL SPRING (C)	
19	4630515000	COIL SPRING (D)	
21	4110657307	BASE PLATE ASS'Y	
21-1	–	DRIVE GEAR	
21-2	–	GEAR SHAFT	
21-3	–	LOCK ARM	
21-4	–	GEAR PULLEY	
21-5	4761001001	2E RING	
22	PLD1A34	LOADING M. SUB ASS'Y	
22-1	–	MOTOR PULLEY	
23	4210439001	GEAR PULLEY ASS'Y	
24	4620084017	TUBE	
25	4210425002	MOTOR PULLEY	
26	4250170003	SLIDER ROLLER	
27	4230046102	BELT (A)	
28	4310236201	LOADER FRAME	
29	4122177105	LOADER BRACKET	
30	4110664206	LOADER GUIDE	
31	1220117057	HIMERON SHEET	
32	4310233107	DISC TRAY	
33	4630435106	DISC TRAY SPRING	
34	4430621000	LOADER RAIL	
35	4620084004	TUBE	
36	4210424100	GEAR PULLEY	
37	4122180008	BRACKET	
38	4630505104	CLAMPER SPRING	
39	4330477105	CLAMPER ARM	
40	PC01A27	CLAMPER PRESS SUB ASS'Y	
41	2124650004	LEAF SW	
42	4230047004	BELT (B)	
43	2U-1461	TERMINAL UNIT	
44	2030241060	1P CONTACT ASS'Y	

Ref. No.	Part No.	Part Name	Remarks
51	4738010009	M1.7x4 #D(W)ZNB	
52	4737500044	3x8CBTS(P)-B	
53	4751140008	3 WASHER	
54	4751005004	4W	
55	4751106042	WASHER	
56	4751005017	4W BKNI	
57	4761003009	3E RING	
58	4713103025	2x6 CBS BK	
59	4744300004	2.6x4BSS(A)	
60	4711807022	3x18 CPS BK	
61	4744300033	2.6x6BSS(A)	
62	4737508017	3x10CBTS(P)-B	
63	4737002005	3x6CBTS(S)-Z	

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks
1	1030982524	CHASSIS	
1	1030982537	CHASSIS	E1 only
2	4122012008	EARTH BRACKET	
3	4140425004	SHIELD PLATE (B)	
4	1050721105	BOTTOM COVER	
5	1050722104	BOTTOM COVER (B)	
6	4140423006	SHIELD COVER	
7	1040155008	FOOT ASS'Y	
8	2U-1461	TERMINAL UNIT	
9	2U-1454A	SERVO & SIG. UNIT	
10	4122142004	TRANS BRACKET	
⚠ 11	2335572007	POWER TRANS	E2, EA, EK
11	2335574005	POWER TRANS	E1
11	2335573006	POWER TRANS	EC, EU
⚠ 12	KU-578B	LINE FILTER UNIT	E2
12	KU-578D	LINE FILTER UNIT	EK
12	KU-578E	LINE FILTER UNIT	E1
12	KU-578F	LINE FILTER UNIT	EA
12	KU-578P	LINE FILTER UNIT	EU
12	KU-578Q	LINE FILTER UNIT	EC
⚠ 13	2062002031	AC CORD	E2
13	2062025005	AC CORD	EA
13	2006031026	AC CORD	E1
13	2062061001	AC CORD	EC, EU
13	2062024006	AC CORD WITH CABEL	EK
⚠ 14	4450056008	CORD BUSH.	
15	1130734106	P. SW LEVER ASS'Y	
16	FG610	CD MECH. UNIT	
17	4770096007	PUSH RIVET	
18	1441601313	FRONT PANEL	
19	1460868409	FRONT PANEL BASE (R)	
20	1430503406	WINDOW	
21	1430504007	REMOCON WINDOW	
22	1130928103	KNOB SERIES	
23	1130863307	OP/CL KNOB	
24	1460869204	KNOB CAP ASS'Y	
25	1130936205	MANUAL KNOB ASS'Y	
26	1130833002	TEN KEY ASS'Y	
27	1140099404	TENKEY FRAME	
28	1430502012	DISPLAY SHEET	
29	1460867303	FRONT PANEL BASE (L)	
30	1120475006	H/P KNOB	
31	1441602202	LOADER PANEL	
32	1020273162	TOP COVER (A)	
32	1020273117	TOP COVER (A)	E2 only
33	1020282001	TOP COVER (B)	
34	1460772003	TOP COVER WASHER	
35	2030241031	1P CONTACT ASS'Y	
36	4122008012	BUSHING PLATE	
⚠ 37	2123315023	VOLTAGE SELECTOR	E1 only

Ref. No.	Part No.	Part Name	Remarks
51	4737508017	3x10CBTS(P)-B	
52	4713404012	4x8CBS-(Z)	
53	4733800010	3x8CBTS-(Z)	
54	4737002005	3x6CBTS(S)-Z	

PARTS LIST OF PACKING & ACCESSORIES

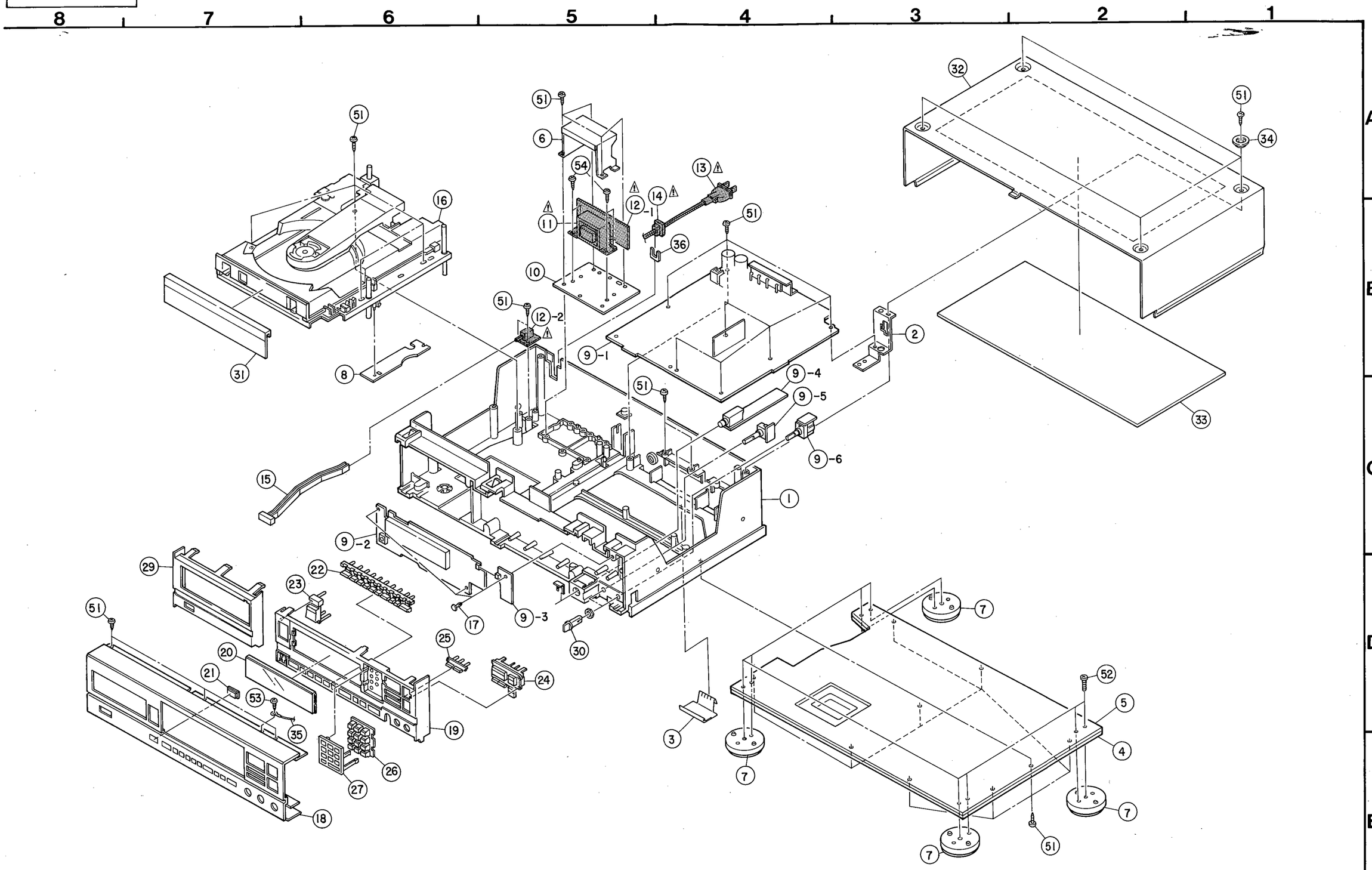
Ref. No.	Part No.	Part Name	Remarks
	5040092060	STYLEN PAPER	
	5030607009	CUSHION ASS'Y	
	5011171211	CARTON CASE	
	5050038030	POLY COVER	
	5111533005	INST. MANUAL	E2,EA, E1,EC EK
	5111532006	INST. MANUAL	EU only
	5111534004	SWEDISM INST. MANUAL	E2 only
	2048121004	2P PIN CORD	
	4990077000	REMOCON (RC-202)	
	2033667007	PLUG ADAPTER	E1 only

WARNING:
Parts marked with ⚠ and/or shading have special characteristics important to safety.
Be sure to use the specified parts for replacement.

Remarks symbols in the parts list refer to the following countries and areas.

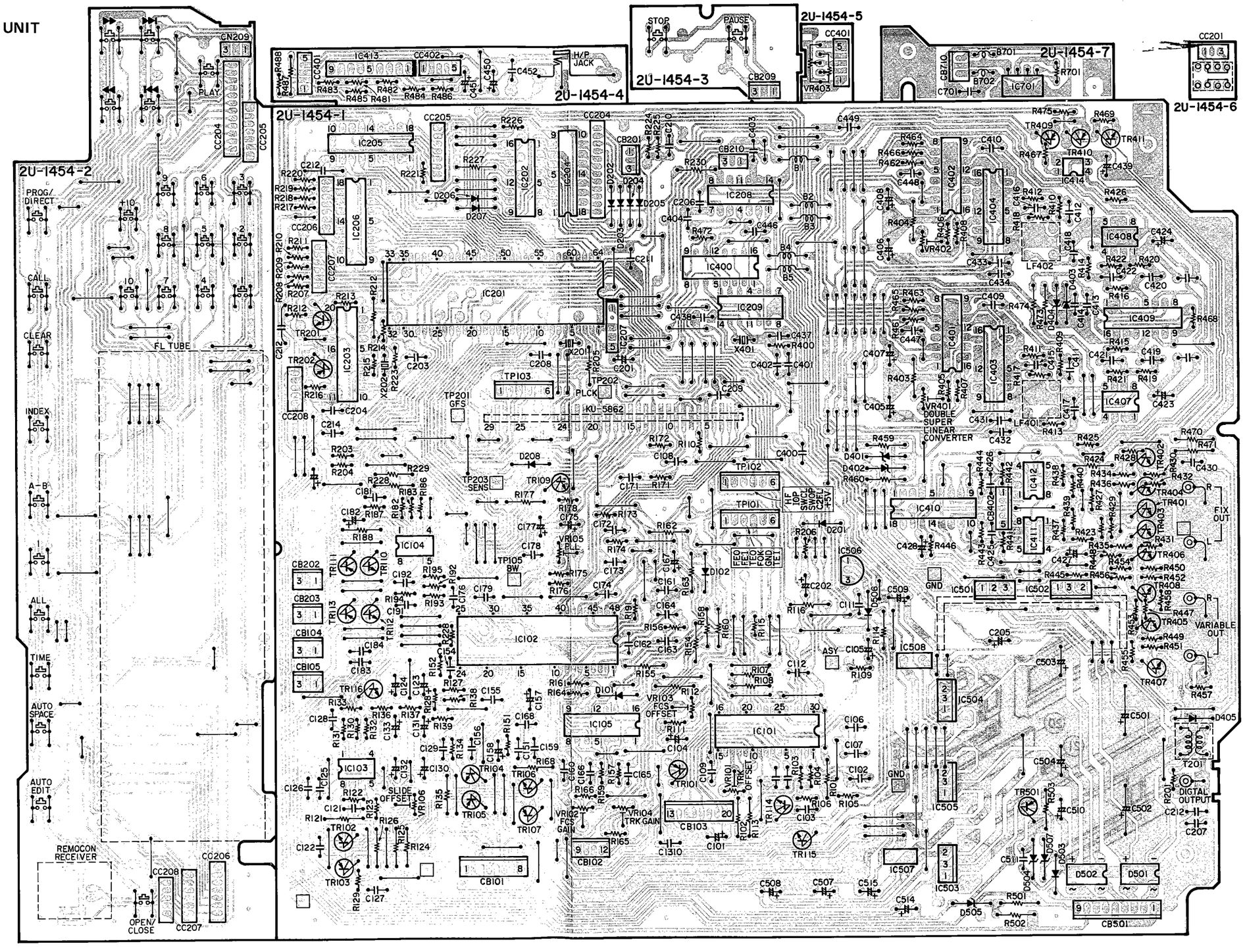
EA:	Australia	EC:	Canada
E1:	Multiple voltage model	EU:	U.S.A.
E2:	European continent	EK:	United Kingdom

EXPLODED VIEW

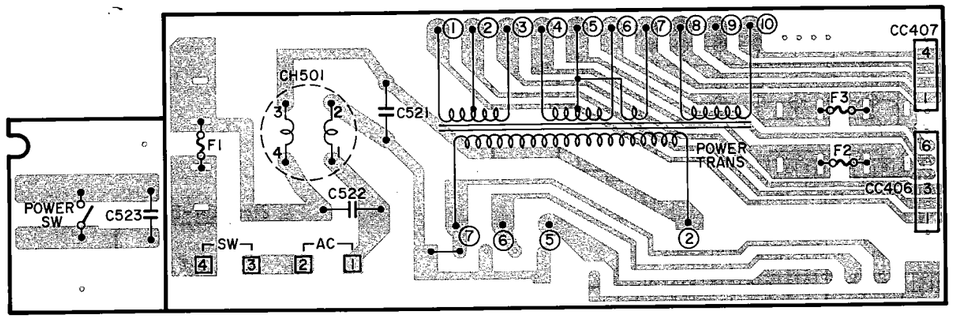


P.W. BOARD

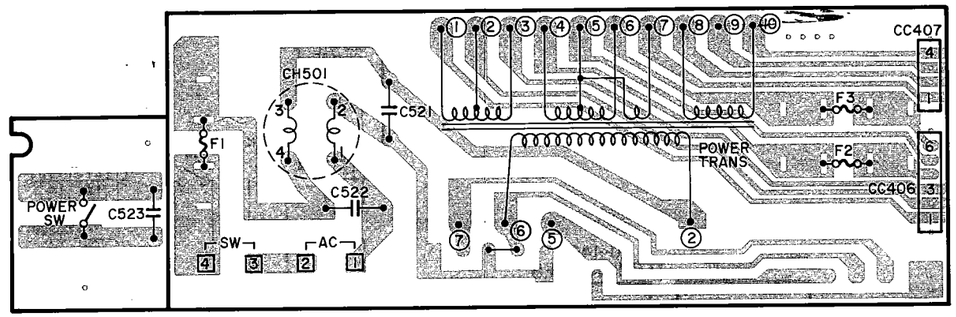
2U-1454 SERVO & SIG. PRO. UNIT



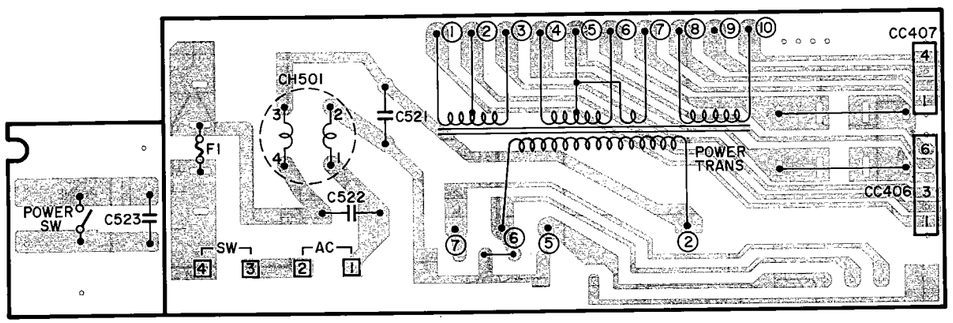
KU-578B LINE FILTER UNIT (E2)



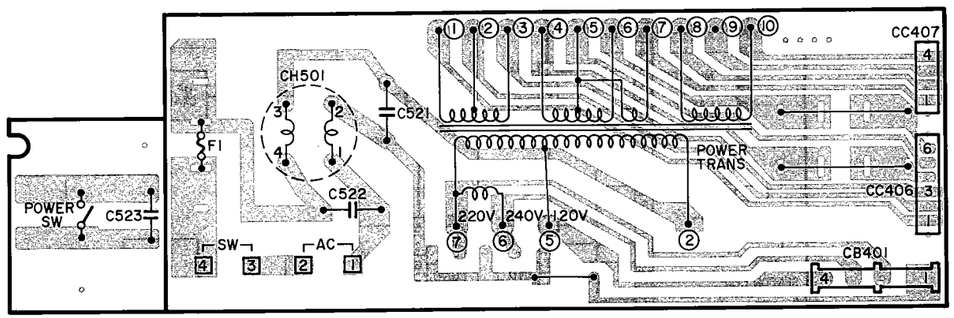
KU-578D LINE FILTER UNIT (EK)



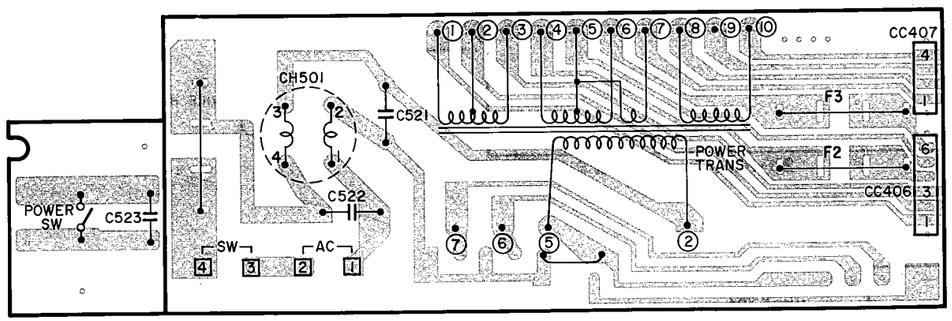
KU-578F LINE FILTER UNIT (EA)



KU-578E LINE FILTER UNIT (E1)

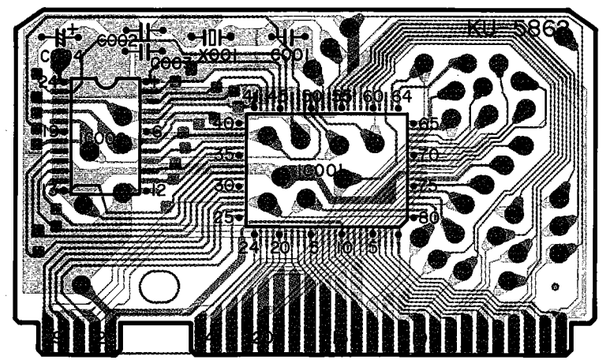


KU-578P/Q LINE FILTER UNIT (EU,EC)

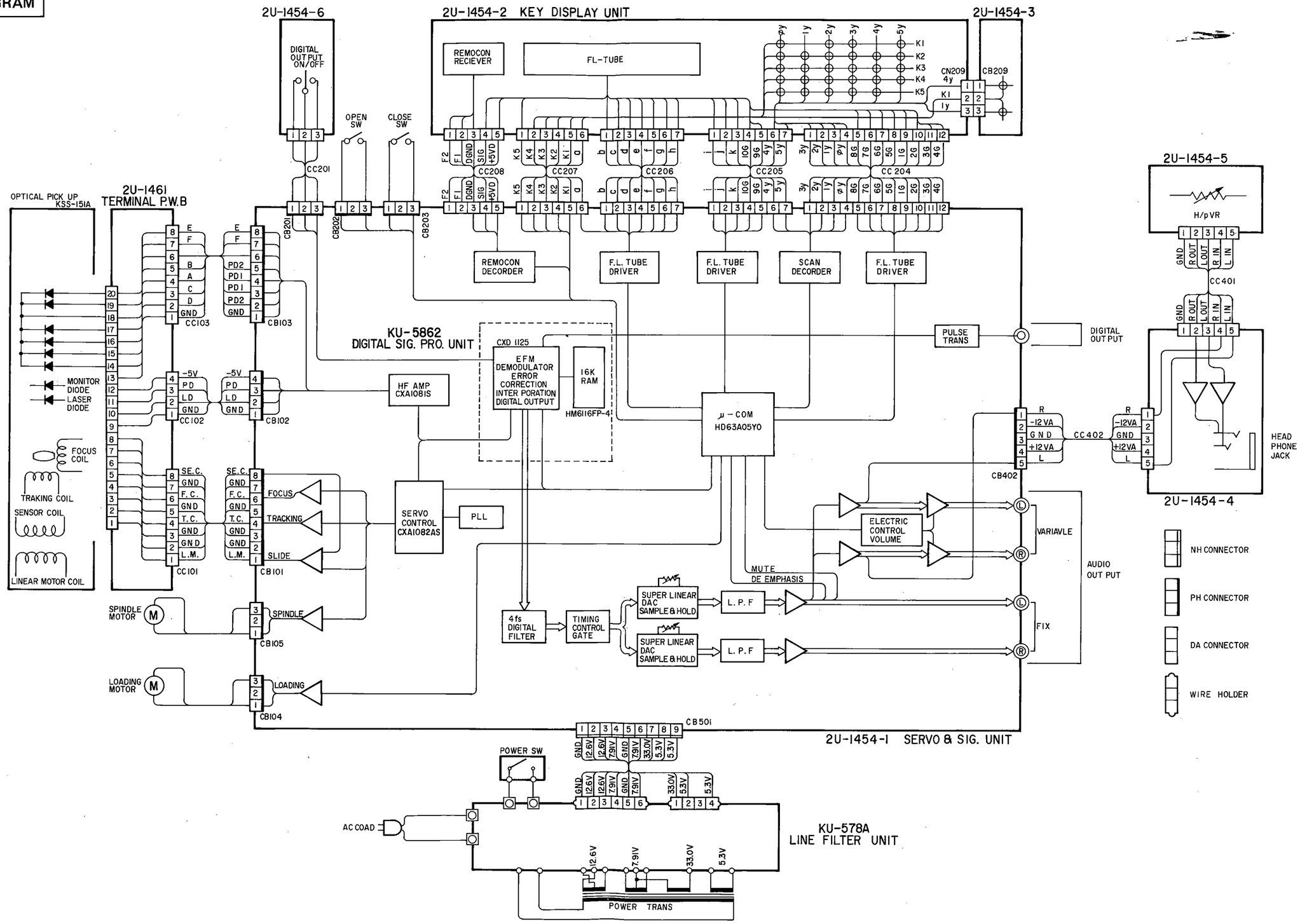


Note: Fuse (500mA) is employed for Canadian model on F2 and F3.

KU-5862 DIGITAL SIG.PRO. UNIT



WIRING DIAGRAM



SCHEMATIC DIAGRAM

1 2 3 4 5 6 7 8 9 10 11

A B C D E F G H

KU-5862
DIGITAL SIG-PRO-UNIT

2U-1454-6
DIGITAL OUTPUT ON/OFF

2U-1454 SERVO & SIG. UNIT

2U-1454-2

2U-1454-3

2U-1454-4

2U-1454-5

OPTICAL PICK-UP

DA CONVERTER

SERVO CONTROL

Europe/Australia Models
KU-576 LINE FILTER UNIT

U.S/Canadian Models

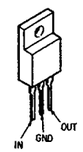
Multi Voltage Models
KU-576 LINE FILTER UNIT

Note : F2,F3 are provided only Canadian Model

NOTE 1. UNLESS OTHERWISE SPECIFIED, ALL RESISTOR VALUES IN OHMS, 1/4 WATT
2. UNLESS OTHERWISE SPECIFIED, ALL CAPACITANCE VALUES ARE IN μF, P=PF
3 THIS SCHEMATIC DIAGRAM IS BASIC CIRCUITRY AND SUBJECT TO CHANGE WITHOUT NOTICE FOR FURTHER IMPROVEMENT

SEMICONDUCTORS

●IC



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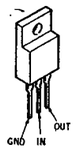
HA17812W



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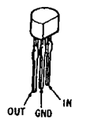

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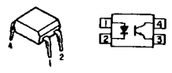
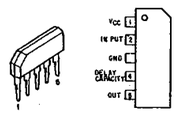


PC-817



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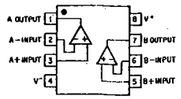

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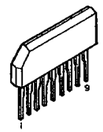

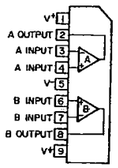

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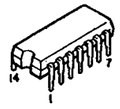

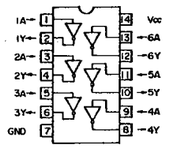

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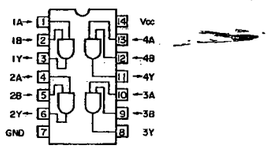

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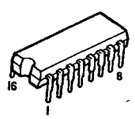

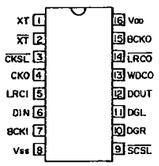

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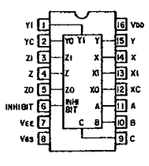

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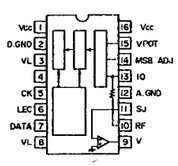
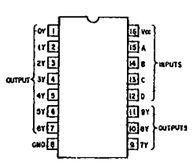


PCM56P-J



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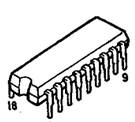

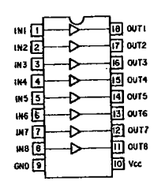

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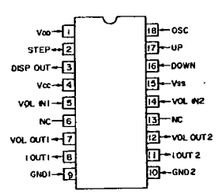

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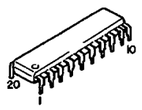

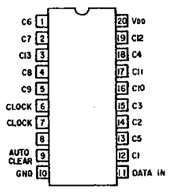

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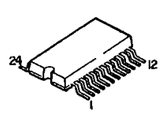

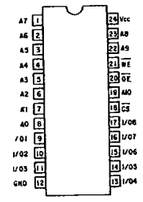

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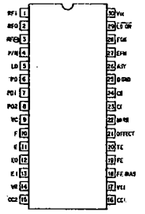

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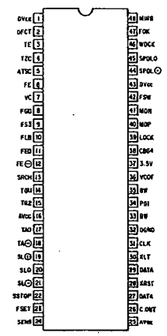

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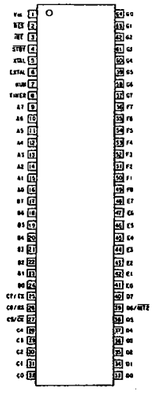

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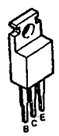

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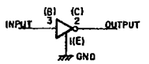
2SC2878(A/B)

2SB562(C)
2SD468(C)



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RN2202(10K-10K) PNP
RN1210(4.7K - - -) NPN

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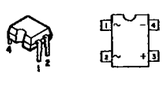

S1WB(A)10

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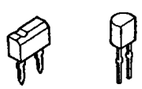

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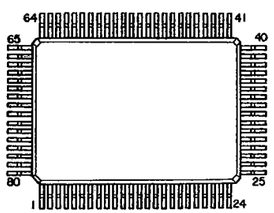

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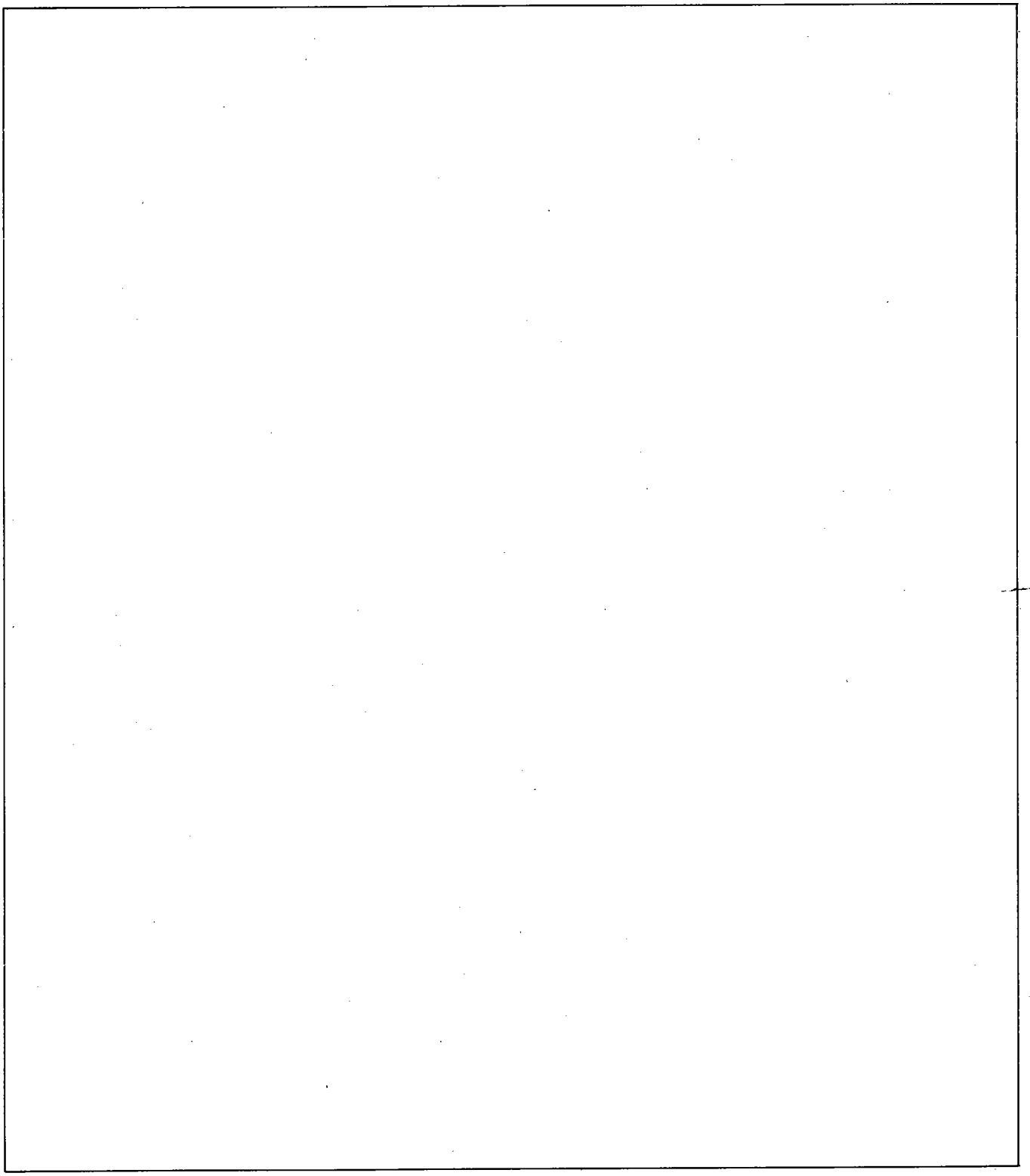

NIPPON COLUMBIA CO., LTD.
14-14, 4-CHOME AKASAKA,
MINATO-KU, TOKYO 107 JAPAN
TEL: 03-584-8111
TLX: JAPANOLA J22591
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